

To: Way, Steven[way.steven@epa.gov]; Schmittiel, Paula[Schmittiel.Paula@epa.gov]; StClair, Christie[StClair.Christie@epa.gov]
From: John Reynolds
Sent: Sun 10/25/2015 5:55:18 PM
Subject: Bureau of Reclamation (BOR) Oct., 2015 Report Issues
BH2_ConstructionCertificationReport.pdf
BH2_ConstructionCertificationReport_DMGRMSapproval.pdf
BH3_ConstructionCertificationReport.pdf
goldkingmine_polrep1_9-23-14_redacted.pdf
1509043_FINAL_092315_1703.pdf

Hi Steve,

The attached file ("1509043 Final 092315 1703.pdf") are the water assay data we acquired 01 Sept., 2015 from the American Tunnel outflow (SIL-07) and from the Gold King Mine #7 outflow (SIL-08) as analyzed by Green Analytical here in Durango. These are the water samples that we flew to the Winner Water Group in Pennsylvanian for their water quality / remediation work and we expect their input about treatment options for these waters shortly. Basic input from Mr. Todd Beers, C.O.O. of the Winner Water Group, has been positive and selecting the desired level of output water quality appears to be the major issue.

Also attached are documents that take strong exception to the recently released Bureau of Reclamation report as follows - basically, the Bureau of Rec blew it!:

The Bureau of Reclamation's (BOR) "Technical Evaluation of the Gold King Mine Incident", dated October, 2015, has some issues with accuracy that are a bit puzzling. One possible answer for the inaccuracies regarding the actual dimensions on Bulkhead #2 and Bulkhead #3 in the American Tunnel is that they may have been given incorrect information. That said, here are the Facts:

[note: here's a link to BOR document: <http://www.usbr.gov/docs/goldkingminereport.pdf>]

Attached are two (2) official documents regarding the final design and installation of the American Tunnel Bulkhead #2 and Bulkhead #3 and are essentially "As Built" reports from the Sunnyside Gold Corporation (Echo Bay Mines) as filed with the Colorado Division of Minerals and Geology. The reports are entitled as follows:

**"File No. M-77-378, TR-25
American Tunnel Bulkhead No. 2
Construction Certification Report"**

and

**"File No. M-77-378, TR-25
American Tunnel Bulkhead No. 3
Construction Certification Report"**

Please note that on page 3 of the Construction Certification Report for **Bulkhead No. 2** the

fourth paragraph reads:

"..... **The minimum bulkhead length was specified to be 10' and the actual length was 10' 1".**"

The Colorado Division of Mines and Geology website also has the final approval for the Construction Certification Report - also attached. The final approval from the DMGRMS for Bulkhead #3 isn't readily available on their website.

On page 3 of the Construction Certification Report for **Bulkhead No. 3**, the third paragraph reads:

"..... **The minimum bulkhead length was specified to be 11' and the actual length was 11' 2".**"

The Bureau of Reclamation report dated October, 2015 states in Appendix B, page B-4:

"CO 1993 American Tunnel, Sunnyside Mine, San Juan County
Three 25-foot-long concrete bulkheads were installed by Sunnyside Gold, Inc., to minimize adit drainage and restore premining groundwater conditions.
The first bulkhead was installed in 1993, followed by installation of a second bulkhead in 2002. Around 1997, 652 tons of hydrated lime were injected into the mine pool to neutralize the water and help reduce pyrite oxidation and acid generation."

Bulkhead No. 1 was installed in the American Tunnel in 1993 and the length of this bulkhead was 25 feet. ***However, Bulkhead No. 2 and Bulkhead No. 3 were installed in 2002 and 2003, respectively, and they are not 25 feet in length!***

I find it very interesting that they bury the bulkhead dimensions in the text of an Appendix when this is probably the most critical factor about the current situation - the waters in the mountain are already over 800 feet in hydraulic pressure (or hydrostatic head)! The two bulkheads, AS INSTALLED, are rated at BH#2 - 640 feet and BH#3 - 773 feet, respectively. The bulkhead at the Red and Bonita is currently open but if the EPA closes this bulkhead, and additional ~300 gallons per minute (gpm) will be stopped from flowing out of the mountain and that will increase the pressure on the entire hydraulic system with in the mountain and push the hydrostatic/hydraulic head that much higher!

The most glaring inaccurate statement from the main body of the report is found on page 17 which states: "After installing hydraulic bulkheads in the Mogul Mine in 2003, increased flows began to come from the Red and Bonita and the Gold King Mines, and eventually the ARSG listed these as their top two priorities for remediation." This is not correct as the flows in the Red and Bonita, Gold Kine ***and*** the Mogul all started to increase following the installation of Bulkhead #2 and Bulkhead #3 in the American Tunnel.

The EPA report "POLREP #1 (Initial Pollution Report) – Removal Assessment Gold King Mine Site". dated Sept. 25, 2014 (attached), states the following: "The flow from the Red and Bonita Mine, the Gold King (Level 7) Mine, and the Mogul Mine all experienced significant increases in flow following the plugging of the American Tunnel that occurred between 1998 and 2002.

Water quality in the Animas River has been degraded progressively since that time."

The mistake is not significant but it points to the apparent lack of quality in the report generated by the Bureau of Reclamation along with an incomplete peer review from the USGS and USACE.

Please do not hesitate to contact us if you have any questions or comments.

Regards,
John Reynolds
durango geophysical operations
970-759-1800